varying chemical action of fixing agents; (4) solvent action of materials used in fixation and imbedding; (5) varying effects of chemical reaction between basic or acid stains and the different cell structures; and (6) effect of subjecting tissues to the temperatures necessary in manipulation. The author used an elaborate series of checks in control of the studies.

TRYPANSOME INFECTION IN MAMMALS

Lanfranchi (Atti. R. Ac. Linc. 1916, pp. 369-73) believes that *Trypanosoma brucei, T. gambiense* and *T. vodiense* can pass from the blood of a pregnant mother into the milk; and that by the first two, at least, the fœtus may also be infected in the same way.

IMPROVING TECHNIC FOR SHOWING DETAILS OF DIVIDING CELLS

Allen (Anat. Rec., July, 1916), as the result of a series of critical experiments to perfect the technic for demonstrating the details of mitosis in the central nervous system and in the testis of the albino rat, without producing distortion of adjacent tissues, offers the following suggestions:—

"For cytological work, the slightest gain at any point in the technic is worth working for.

"Very gradual changes of fluids, agitation of fluids during changing, and slow infiltration appear essential in order to get the best results from any fixative.

"The addition of a low percentage of urea to fixing fluids results in sharpening the chromosomes and preserving the structure of the achromatic nuclear material. It may help the penetration of the fluids.

"Picro-formol-acetic mixtures are more effective when used at about 38° C. Cold is detrimental.

"Flemming's fluid is more effective if used at 0° C. or a few degrees lower.

"Flemming's fluid is of no value as a brain fixative at any temperature. At times (if urea is added) it isolates metaphase and anaphase chromosomes in spermatocytes somewhat better than any

other fixative tried (except B-15*), but is hard on the rest of the tissues and shrinks heavily.

"Anilin oil is an excellent substitute for the higher alcohols.

"Xylol shrinks tissues more than the vegetable oils."

VISUAL EFFICIENCY IN THE USE OF OPTICAL INSTRUMENTS

Purkis (J. R. M. S., June 1916) makes some good practical working suggestions for those who use the microscope for prolonged observations, where necessity of accurate observation and minimum fatigue are necessary.

1. The fact that only one plane is in sharp focus at a time and that other planes show dimly tempts the novice to strain the eye in the effort to make it see things which are not clearly in focus, instead of adjusting the distance.

2. This suggests also that care should first be taken to discover the limitations of the instrument which cannot be corrected by manipulation and to accept these, refusing to try to make the eye compensate for these limitations, by intensely close observation.

3. The eye should look at the field almost casually. What it cannot see by looking quietly at the object, it cannot see by an intense and strained gaze.

4. Recognizing that there is a certain amount not only of shock to the eye in sudden changes from dark to light luminosities and conversely, but also strain of the eye in the effort to see well before the re-adjustment is completed, it is important to avoid so far as possible sudden changes of luminosity. In this connection it is well (a) to see that the illumination of the room is not in too great contrast with that of the instrument; (b) to modify luminosity to compensate when passing from one objective to another; (c) to avoid sharp contrasts of luminosity within the field itself; and (d) when resting the eye preparatory to observation or during observation to do so in approximately the same illumination to be used in the field of the instrument.

*B-15 is a picro-formol chrome-acetic mixture in urea:

Picric acid	75cc
Formol	25cc
Acetic acid	5cc
Chromic acid (crystal)	1.5 grams
Urea	2.0 grams